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CLASSROOM INTERACTION--REVIEW OF THE LITERATURE.

BY- GARRARD, JUDY
TEXAS UNIV., AUSTIN, RES. AND DEV. CTR. FOR ED.

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THIS PAPER REVIEWS RECENT MAJOR STUDIES CONCERNED WITH CLASSROOM INTERACTION WHICH ENCOMPASSES BOTH THE VERBAL AND NONVERBAL BEHAVIOR OF A TEACHER AND THE PUPILS IN ELEMENTARY AND SECONDARY CLASSROOMS. REVIEW OF THE THEORIES UPON WHICH THESE STUDIES WERE BASED WAS NOT WITHIN THE SCOPE OF THIS STUDY. PART 1 BRIEFLY DISCUSSES TWO APPROACHES TO THE CONSTRUCTION OF ITEMS FOR AN OBSERVATIONAL SCHEDULE, THE SIGN SYSTEM AND THE CATEGORY SYSTEM, AND REVIEWS FOUR INSTRUMENTS OF THE OBJECTIVE CATEGORIZATION TYPE. THESE INSTRUMENTS ARE THOSE BY BALES, WITHALL, MEDLEY AND MITZEL, AND FLANDERS.PART 2 DISCUSSES THE FINDINGS REPORTED FROM REPRESENTATIVE STUDIES OF CLASSROOM INTERACTION CONCERNED WITH THREE MAIN AREAS--ELEMENTARY-SECONDARY, INTRAELEMENTARY, AND TEACHER-PUPIL. PART 3 DISCUSSES THE HISTORY OF THE DEVELOPMENT OF THREE ELEMENTS OF CLASSROOM INTERACTION RESEARCH--MEASUREMENT, CRITERIA, AND DATA COLLECTION. THE FIRST OF TWO APPENDIXES PRESENTS TWO PREVIOUSLY UNPUBLISHED RESEARCH PAPERS. ONE PAPER DEALS WITH "VERBAL BEHAVIOR AND SOCIAL STATUS," AND THE OTHER DEALS WITH "STUDENT TEACHERS AND INTERACTION ANALYSES." THE SECOND APPENDIX PRESENTS THE "FAIR" CATEGORIES WHICH ARE ADAPTED FROM THE FLANDERS INTERACTION SCALE. (AL)

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Review of the Literature: Classroom Interaction*

Judy Garrard

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Introduction

Purpose. The purpose of this paper is to review the recent, major studies concerned with classroom interaction. The term, classroom interaction, encompasses both the verbal and nonverbal behavior that takes place between a teacher and her pupils in elementary and secondary classrooms.

Scope and Limitations. The scope of this paper is both narrow and broad--narrow in terms of not being an extensive and exhaustive summary of all of the studies in which interaction was the research subject; broad in that several different kinds of studies using various observation instruments will be reviewed.

General Sources. The reader is referred to several excellent reviews of the literature on this subject. These include: Gage (1963), Amidon and Simon (1965), Morsh and Wilder (1954), and Tiedeman (1942). A recent and on-going reference source is the Classroom Interaction Newsletter edited by Simon. The first issue was published in December, 1965.

Theoretical. The theoretical basis of any empirical study is of paramount importance. A review of the theories from which the major studies of classroom interaction have arisen is not within the scope of this paper. However, The Handbook of Research on Teaching (Gage, 1963) is an

excellent source. With respect to the theoretical aspects of a study in this field, Soar (1962) notes that "theoretical advantages follow from conceptualizing the research problem as one with at least three phases: (1) measurement of teacher characteristics, (2) measurement of classroom behavior of teacher and pupils, and (3) measurement of pupil change and growth." (p 2). He states that jumping from one part of the continuum to another without including the immediate phase will make "...the interpretation of the findings in terms of existing theory often difficult if not impossible." (p 3)

Outline. This paper consists of five sections: Part I is a review of some of the different categorization systems used in various studies. Part II is a discussion of the results of some of the studies in the field of classroom interaction. The development of research in this area is discussed in Part III. Appendix I is a summary of two unpublished papers which have a great deal of relevence to the projected research of the Counseling and Assessment Division. A brief description of the FAIR categories, an adaption of the Flanders Interaction Scale, is given in Appendix II.

Part I: Instruments

According to Gage (1963), there are two main approaches to the construction of items for an observational schedule: the sign system and the category system.

The sign system consists of listing " ... beforehand a number of specific acts or incidents of behavior which may or may not occur during a period of observation. The record will show which of these incidents occurred during a period of observation, and, in some cases, how frequently each occurred." (Gage, p 299)

The category system limits " ... the observation to one segment or aspect of classroom behavior, determines a convenient unit of behavior, and constructs a finte set of categories into one and only one of which every unit observed can be classified." (Gage, p 298) This section on the major instruments used in studies of classroom interaction generally falls into the latter category. In other words, the following instruments are objective categorization systems.

Although there have been many studies using various instruments of observation, a number of representative studies using four of the major observation scales will be discussed here. These instruments are those by Bales, Withall, Medley and Mitzel, and Flanders.

Bales. One of the earlier systems of observation to be developed was the Bales Interaction Process Analysis (Bales, 1950). This system consisted of twelve categories for describing teacher and pupil behavior and required that an observer be present in the classroom at the time the recording was done.

Withall. A refinement of the categories of the Bales Interaction Process Analysis was made by Withall when he developed the Social-Emotional Climate Index, made up of seven categories for teacher statements.

The author originally intended that this instrument be used as a method for coding typewritten transcripts of classroom interaction. (Withall, 1949) Mitzel and Rabinowitz (1953) demonstrated the reliability and validity of Withall's instrument in a study in which they first tried to categorize interaction from sound and stenographic records; this failing, they took their research and the observation technique into the classroom itself. Another study (Rabinowitz and Rosenbaum, 1958) was successful in finding a correlation of pupil-teacher rapport with one portion of the Withall Index, the Manifest Teacher Hostility Scale.

Medley and Mitzel. Medley and Mitzel (1955, 1958, 1959) developed the Observation Schedule and Record Technique (OScAR) by modifying and combining the methods used in Withall's Climate Index and in the Classroom Observation Code Digest by Cornell, et al (1952). Three main dimensions of the OScAR proved to be of significant use: "The Emotional Climate, having to do with the relative amount of hostility observed; Verbal Emphasis, having to do with relative emphasis on verbal and traditional school room activities; and Social Structure, having to do with the relative degree of pupil initiated activity." (1958, p 91).

Mitzel and Rabinowitz (1953) used both the OScAR and the Climate Index in studying the relationships between the two instruments in an actual classroom situation. Wilk (1956) also used the OScAR as well as the Flanders Interaction Analysis scale in his study of student teachers in elementary education. Another study in which the OScAR was used was the one conducted by Bowers and Soar (1962). This study used the three above

named factors: Emotional Climate, Verbal Emphasis, and Social Structure.

Flanders. The Minnesota Interaction Analysis Scale developed by Flanders consists of seven categories for teacher talk and two for pupil talk and is " ... the most sophisticated technique for observing climate thus far, one which is unique in that it perserves a certain amount of information regarding the sequence of behavior." (Medley & Mitzel, 1963) The Flanders scale has been used in numerous studies and those by Wilk and Edson (1963) and Giammatteo (1963) are representative of the type of research conducted in the public schools. The Interaction Analysis is one of the most recent and extensively used techniques, and "much of the work on teacher-pupil interaction patterns has been by Flanders (1960) and his associates (Amidon & Flanders, 1963; Flanders and Amidon, 1962)." (Amidon and Simon, 1963, p 132)

Part II: Results

The findings reported in this section are from representative and, in most cases, recent studies in the field of classroom interaction. These results fall into three main areas: elementary-secondary, intra elementary, and teacher-pupil.

Elementary-Secondary. Using the Classroom Observation Record of 22 dimensions, Ryans (1961) compared pupil and teacher behavior in elementary and secondary schools. On the basis of observers assessments, productive pupil behavior was highly related to the teachers' behavior that was understanding, friendly, organized businesslike, and stimulating in the

elementary school setting. In the secondary school classes, however, this relationship was low. Students' productive behavior in the secondary school setting was more related to teacher behavior that was stimulating and original.

Intra-Elementary. With the Flanders Interaction Analysis and the OScAR, Wilk (1964) studied student teachers in an elementary school setting and how their teaching behavior differed between the lower grades (1st through 3rd) and the upper grades (4th through 6th). He found that the student teachers in the upper grades "gave more positive supportive attention to individual pupils; used a wider variety of teacher and pupil learning materials; created a better classroom climate; gave more emphasis to verbal materials and activities." (p 378) The student teachers in the lower grades "gave more opportunities for pupils to lead the class; talked more, evidenced more verbal behaviors which restricted pupils' freedom of response." (379)

The experience of one quarter of student teaching resulted in teaching behavior during the second quarter that included "a wider variety of activities in directing the class as a group ... and ... more verbal behaviors which increased pupils' freedom of response." (p 379)

In a study of interaction during reading lessons, Giammatteo (1964) examined the differences among the elementary school grade levels. Using the Flanders categories, he found that " question and answer type teaching was used mostly by first and second grade teachers and least by fifth and sixth grade teachers; lecture is used about half of the time a

teacher talks in grades 3, 4, 5, and 6, and about one-third of the time in grades 1 and 2; first and second grade teachers used more commands than other groups of teachers; one-third of all talk in the fifth and sixth grades was stimulated by the student." (p 11)

Teacher-Pupil Behavior. An early study conducted by Anderson, et al (1945) using their own observational system with elementary teachers found that "teachers who used dominative techniques produced in their pupils aggressive and antagonistic behaviors which were expressed toward both their teachers and their peers. On the other hand, teachers who used socially integrative behaviors appeared to facilitate friendly cooperative and self-directive behaviors in the children." (Withall & Lewis, p 693) Dominative behavior included such examples as directing, critizing, punishing, making gratuitious judgments. Integrative behavior was questioning, encouraging, accepting ideas, showing feeling. (Gage, p 692).

In a prediction study, Wilk and Edson (1963) used observers' assessments of directive or indirective teacher behavior (based on the Flanders Interaction Analysis system) as the criteria. They found that direct influence in teaching behavior (lectures, directs, criticizes, self justifys) during the student teaching semester of the senior year could not be predicted from school admissions data taken during the subjects' freshmen year. However, the researchers found they could predict indirect influence in teaching behavior (feeling, praise, ideas, questions) from a combination of the Minnesota Teacher Aptitude Inventory

and the sophomore cumulative grade point average.

Bellack, et al (1963) characterized the categorized behavior of secondary school teacher-pupil interaction as the "classroom game" and reported that with the social studies teachers they observed " ... the two most common patterns of classroom discourse, making up nearly fifty percent of the interaction, were (a) teacher solicitation-student response, and (b) teacher solicitation-student response-teacher reaction ... " (Amidon and Simon, 1965, p 133)

Giammatteo (1963) used the Flanders Interaction Analysis in a study of elementary school teachers. "He found that teachers accounted for more than fifty percent of the talk in the classroom and that most student talk was in response to teachers question." (Amidon & Simon, p 132)

In another study by Amidon and Giammatteo (1965)*, the teaching patterns of superior teachers (as defined by supervisors' ratings) were compared with those of a control group of teachers. "Using Flanders categories, they found that superior teachers talked less, accepted more student ideas, encouraged more pupil initiated participation, and gave fewer directions than did average teachers." (Amidon & Simon, p 132)

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* Note reprint in our files of this paper: Amidon, Edmund and Giammatteo, Michael. The verbal behavior of superior teachers.

Part III: Development of Research

The research of classroom interaction has become, or is in the process of becoming, more sophisticated in the areas of measurement, criteria, and data collection.

Measurement. The study of classroom interactions has gone from global and subjective, verbal descriptions which were used before World War I to the detailed, objective, and numerical ratings of the present. While the methcdological refinements to be made in the next ten to twenty years will probably make our present systems appear obsolete and clumsy, researchers today can look back and feel reassured that their techniques are becomming more objective and sophisticated. It is interesting to examine one of the earliest efforts to replace global descriptions with objective measures which was by Horn (1914). He proposed that a set of symbols be used in studying pupil participation in the classroom. Puckett (1928) elaborated on Horn's technique by developing a system of circles and squares. Several years later Wrightstone (1935) differentiated between teachers' and pupils' verbal behavior in his use of nine different measures.

Criteria. With the advancement in coding and categorizing came the gradual realization that the teaching-learning process was extremely complex. A more recent trend has been one away from the single criterion study of isolated teacher traits or qualities to studies that have multi-criteria that attempt to define, examine, and analyze the

complex of factors which result in teaching and learning behavior, and in unique teaching-learning patterns. (Withall & Lewis, 1963) No doubt the wide availability of electronic computers has aided in this development of multi-criterion studies.

Data Collection. The most recent advancements in the field of classroom interaction, however, have been in the area of data collection. Cogan was not exagerating when he wrote in 1963, " ... we do not have adequate data for the analysis of the behavior of the teacher. This famine of data possessing substance and dimensionality has not been the result of a lack of plausible theory; it is more probably the cause. (p 242)

In 1953, Ackerman stated that the actual classroom behavior of teachers and pupils was " ... the crucial step in the entire process of research on teaching and teacher education." (p 286) He pointed out that this data should be objective. Tne years later, Medley (1963) voiced the same opinion somewhat more emphatically when he wrote " ... Just about everything we know about teaching and learning in the classroom is based either on analogous reasoning from research done outside the classroom or on somebody's opinion about what he saw in the classroom" (p 273) The need for objective data has been a growing concern since before W. W. I, and only recently has modern technology been able to meet the demands for accurate, objective, efficient, and practical data gathering equipment. Such equipment as tape recorders, sound cammeras, and video-tape and cammera recorders are the examples referred to more.

Appendix I: Research Papers

The purpose of this appendix is to bring two research papers to the attention of the staff of Counseling and Assessment. Both of these papers are unpublished (and according to the respective authors, both are rough drafts); copies might be obtained from Shirley Mennaker.

Verbal Behavior and Social Status. Hill and Giammatteo (1965)* were interested in the problem of student teachers' use of different verbal patterns with elementary school pupils from two extremes of socio-economic areas. The researchers used the Flanders Interaction Analysis technique in looking at the different teaching styles. Some of the results of this study were: "The students were more willing to initiate response in the high socio-economic areas. The acceptance of student thoughts were more acceptable to the pre-service teachers when teaching in the high socio-economic area. More criticism and praise were used in the high socio-economic area but extended praise was used in almost equal amounts in both situations. Extended acceptance of student ideas was used more often in the high socio-economic areas.

Thirteen percent of the student talk in the low socio-economic area was student initiated. The pupils in the high socio-economic areas initiated 23 percent of their talk. Communication, indeed, is

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*Hill, E. H. and Giammatteo, M. C. Social Status Differentiation in the Verbal Behavior of Sixty Pre-Service Teachers During Language Arts Lessons.

similar to earlier home life patterns in which the children from the oow areas are expected not to initiate discussion." (pp 18-19)

Student Teachers and Interaction Analyses. The paper by Simon, et al * is pertinent to a treatment variable that Counseling and Assessment will introduce this fall.

Simon, et al trained a group of student teachers to use the Flanders Interaction Analysis technique before they student taught. A control group was not given such training but was taught learning theory. Both groups of subjects were then observed twice a week during their student teaching experience by the researchers. (During these observations, the Flanders categories were used.)

The results were in the expected direction: Student teachers trained in the Flanders technique were " ... more accepting, less critical, and less directive than student teachers nottrained in Interaction Analysis; there was also a tendency for student teachers who learn Interaction Analysis to have more student initiated talk, more extended student initiated talk and less silence or confusion in their classroom than student teachers taught learning theory." (p 11)

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*Simon, A., Samph, T., Soar, R. S., and Amidon, E. Programing Teacher-Pupil Interaction Patterns. Paper delivered at the American Educational Research Association, February 1966, Chicago, Ill.

Appendix II: FAIR Categories

The following definitions are the ones the film judges have been using in their rating of the PEB, Metz, and Porter films from September, 1965 to July, 1966.

Teacher Categories.

C critizes, justifies own authority; hostile, cold, withholding

D directions which student is expected to comply

F accepts feelings/ or recognizes original ideas. Really hears and understands in a nonthreatening manner

I accepts or uses routine responses (ideas)

L lectures; giving facts or opinions about content or procedure

N encourages or shows warmth by speech, facial expression, or bodily movement

Q asks questions with the intent that a student answer

Pupil Categories.

E eager; enthusiastic. Student answers waving hand or other signs of interest.

H attention lapse. Hostile, defiant, cold, bored, or inattentive pupil behavior

R routine pupil response. Need not be seen on film

V Volunteer response. Must be heard; need not be seen.

W group work, even if silent

K chaos; no basis for judgment. No sound or picture.

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